

Appl. No. 10/687,180
Amdt dated September 12, 2007
Reply to Office Action of July 17, 2007

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REMARKS/ARGUMENTS

Claims 1-42 are pending. Claims 21-28 and 35-42 are allowed.

Claims 1 and 7 have been amended with the deletion of "a" before "information" and deletion of one of the commas before "comprising." Further, claim 7 has been amended to insert a comma before "but" on line 6; however the same change was not made to claim 1 because this clause was deleted. These changes are believed to have overcome the Examiner's objections to these claims. Accordingly, claims 7-14 should now be allowed.

Claim 1 has also been amended to add the "providing an axis of rotation at a canted angle with respect to the image plane" recitation.

Claims 15, 21, and 29 have been amended to recite "an axis of rotation at a canted angle with respect to the image plane is provided."

The rejection of claims 1-3, 5, 15-17, 19, 29-31, and 33 under 35 USC 103(a) as being unpatentable over Swift (US 4472822) in view of Badea et al ("3D Imaging System for Dental Imaging Based on Digital Tomosynthesis and Cone Beam CT") and Ruimi (US 6324246) is respectfully traversed. Without conceding anything about the rejection of the dependent claims, the basis for the rejections of independent claims 1, 15 and 29 is fundamentally flawed. Applicants' claims 1, 15, and 29 have now been amended to further clarify the distinctions between Applicants' invention and the prior art cited. They now include a recitation that includes providing an axis of rotation at a canted angle with respect to the image plane. Swift does not provide an axis of rotation that is canted to the image plane. Indeed, the axis of rotation provided by Swift is a far departure from Applicants' canted angle, the axis of rotation being placed on the same plane as their image detector (see Fig. 5). In this regard, the Examiner contends that Ruimi is able to cure the deficiency of Swift and cites the following disclosure from Ruimi's as support:

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“In some scanners, the long axis of the subject's body, along which direction the bed is translated, may be angled relative to the plane of rotation of the gantry, rather than being perpendicular to the axis, as in conventional scanners. This angling typically includes swiveling the bed about a vertical axis, tilting the gantry about a horizontal axis, or a combination of swiveling and tilting. (Emphasis added; see column 1 lines 45-58).

However, a careful reading of this passage simply indicates that the bed is swiveled – not angled. And the only reference in Ruimi to anything resembling angling is with the use of the word “tilt.” Nevertheless, even this “tilt” is in reference to tilting of the gantry. The aforementioned “swiveling” aspect of Ruimi is not equivalent to Applicants’ canted angle of rotation with respect to the image plane, as clearly evident from a careful inspection of Ruimi’s Figure 1, as referenced by the following passage:

“Scanner 20 may be configured so that axis 34 is substantially perpendicular to the plane of rotation of gantry 32. Additionally, axis 34 may preferably be angled relative to the gantry plane, for example, by swiveling bed 24 horizontally, in a direction indicated by arrow 33, and/or by tilting gantry 32 about a generally horizontal tilt axis in a direction indicated by arrow 35. Preferably, the tilt and swivel angles are controlled by a system control unit 46, which also regulates the rotation of the gantry and the advance of the bed. (Emphasis added; see column 7, lines 7-16).

Thus, clearly Ruimi does not provide any canted angle of the object with respect to the image plane, let alone provide an axis of rotation that is canted to the image plane. Accordingly, these rejections should be withdrawn.

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Even if swiveling of the object could be construed to be similar to Applicants' an axis of rotation that is canted to the image plane, which it clearly cannot, there is no motivation to combine Swift with Ruimi.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). In this regard any possible benefits that might be suggested by Ruimi of having the object swiveled are interpretable within the context of using a rotating gantry system. There is no suggestion of the benefits of the object being at a canted angle (or even swiveled), let alone the benefits of providing an axis of rotation that is canted to the image plane in regards to systems that do not involve a rotating gantry, as claimed by Applicants.

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Here, Applicants believe that the Examiner is proposing that the object of Swift (see Swift Fig. 5) be rotated at a canted angle. However, it is clear from the specification of Swift that the purpose of their invention is to rotate the object along the image plane (i.e. plane of their detector). Indeed, modifying the object's rotation to a canted angle with respect to the image plane would result in the patient being ejected from his support, thereby making the invention unsatisfactory for its intended purpose.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Here, Swift discloses that the detector (18) and x-ray source and mechanical scanner (11-16) move along a vertical translation (19). Clearly, modifying the object so that it is now rotated at a canted angle relative to the

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image plane would not result in an up/down scan of the patient's body thereby changing the principle of operation of their invention.

The rejection of the remaining claims 4, 6, 18, 20-28, and 32 under 35 USC 103(a) as being unpatentable variously over Swift, Badea, Ruimi, Hsieh and Yanof, is respectfully traversed. Without conceding anything about the rejection of the dependent claims, the basis for the rejections of independent claims is fundamentally flawed for the aforementioned reasons. Accordingly, these rejections should also be withdrawn.

In view of the foregoing, applicant believes that the application is in condition for allowance and respectively solicits a Notice of Allowance. The Commissioner is hereby authorized to charge payment of any fees required associated with this communication or credit any overpayment to Deposit Account No. 50-3881. If an extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. 50-3881.

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